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Servicing Requirements for Pre-Engineered Clean Agent Fire Extinguishing Systems

- Ref: (a) National Fire Protection Association (NFPA) 2001, Standard on Clean Agent Fire Extinguishing Systems
(b) CG-5431 Marine Inspection Notice 02-12 Visual Examination in Lieu of Hydrostatic testing for Clean Agent Pre-Engineered Fixed Fire Suppression System Cylinders

During several recent COI and Annual inspections we have found serious deviations from the requirements for the annual testing of installed pre-engineered clean agent systems. Proven and tested firefighting systems are vital components for the safe operation of all inspected vessels; therefore vessel owners and operators are reminded that they are ultimately responsible for ensuring their firefighting equipment is serviced and tested in accordance with Title 46 Code of Federal Regulations (CFR).

The applicable sections of Title 46 of the Code of Federal Regulations (CFR) 97.15-60, 132.350, and 176.810, require that the following items associated with all pre-engineered clean agent systems must be tested annually; cylinders are to be weighed, time delays and other alarms tested, piping including all hoses and nozzles examined, and ventilation shutdowns tested.

Pre-Engineered Clean Agent Systems:

Pre-engineered clean agent systems shall be serviced and tested in accordance with reference (a), (c) and the manufactures specifications as outlined below. Any cylinders requiring hydrostatic testing must be completed by a person holding a current requalification identification number (RIN) as per 49 CFR 180.209(g). A requalification identification number or RIN means a code assigned by U.S. Department of Transportation (DOT) to uniquely identify a cylinder requalification, repair, or rebuilding facility.

The following is a list of all items required to be inspected, tested, serviced, and documented by a certified servicing company annually:

1. Visual inspection of the material condition of the entire system including, but not limited to the cylinder, piping, hoses, discharge nozzles, pressure gauges, controls, switches, pull cables, wiring, and placards.


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2. Cylinders shall be removed from the mounting racks and an annual weighing of the clean agent cylinders using a certified scale shall be conducted to ensure no weight drop greater than 10 percent of the net content for the cylinder. If at any time a cylinder has a weight drop greater than 10 percent, the cylinder must be replaced or refilled.

3. Inspect cylinder for the date of the last hydrostatic test. Every 12 years or if more than 5 years since the last hydrostatic test and the cylinder has been discharged, a hydrostatic test of all clean agent cylinders shall be conducted. Reference (a) and (b) permits visual examinations in lieu of periodic hydrostatic testing of steel storage cylinders for fixed Halon 1301 systems, because industry research has shown the non-corrosive characteristics of the chemical agent were not harmful to steel DOT cylinders. NFPA permits the same approach with other clean agents. Paragraph 7.2.2 of NFPA 2001 does not require hydrostatic testing of cylinders. Instead, all clean agent cylinders must undergo a full external visual inspection by competent personnel every 5 years, with the results recorded on an inspection tag or record book. Personnel conducting the external visual inspection must hold a current RIN per 49 CFR 180.209(g). However, some aluminum cylinders must be hydrostatically tested in addition to the visual examinations. Specifically, aluminum cylinders marked as DOT 3AL specification cylinders made of 6061-T6 aluminum must be subjected to hydrostatic testing every 12 years in accordance with 49 CFR 180.209(j). Also, finding aluminum cylinders which are marked as DOT 39 specification cylinders per 49 CFR 178.65, these cylinders are not refillable after discharge, and are not required to be hydrostatically tested; however, they may remain in service indefinitely as long as the 5 year NFPA inspection is performed and recorded throughout the system's life.

4. Inspect flexible hoses and/or previous documentation for last hydrostatic test date. Every 5 years each flexible hose shall be removed from all clean agent systems and hydrostatically tested in accordance with reference (c).

For additional information or clarification regarding this Marine Safety Information Bulletin, please send your questions or comments to: acteurinspections@uscg.mil or call +31 (0) 61-297-9335.


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